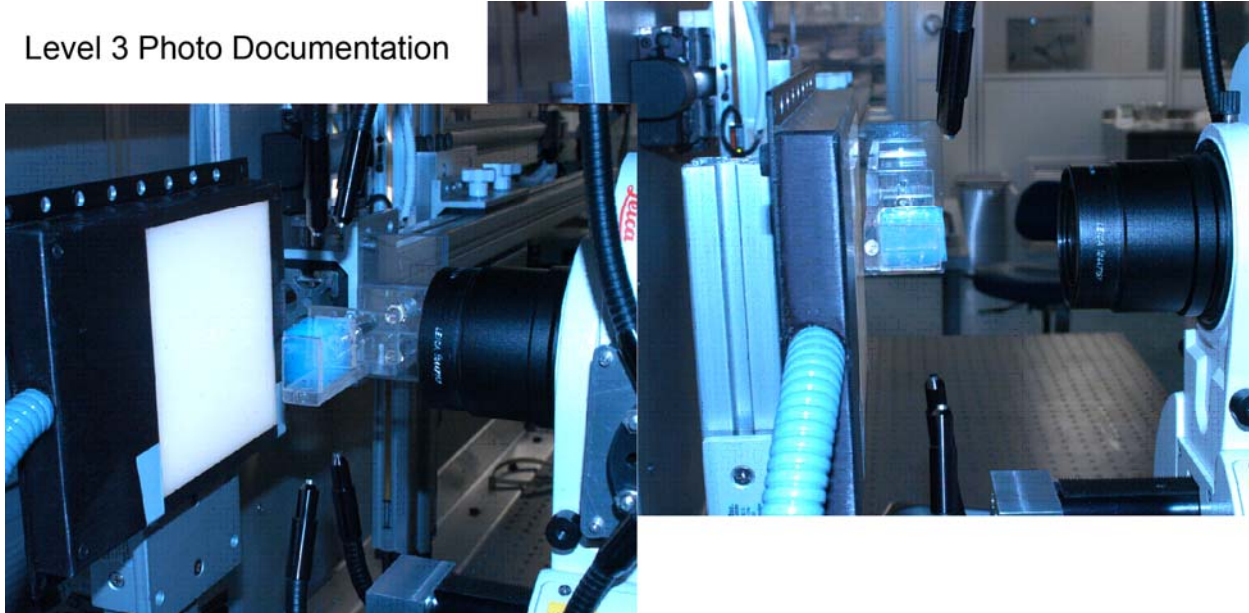


Level 3 Photo Documentation

Level 3 photo documentation of the cometary aerogel tiles consisted of imaging each tile of aerogel from the top with backlighting at 7x and at 20x magnifications using the Leica MZ16A Stereo Microscope system and the DFC320 3.3 megapixel digital camera. These items are part of the Primary Scanning System (PSS) that was specifically developed for this purpose.

Following extraction from the Cometary Tray, each tile was mounted in to the Level 3 fixture, which consists of a three-sided, spring-loaded, glass-lined Lexan device that permits viewing and imaging of the aerogel from the top or sides, or any angle in between these extremes.

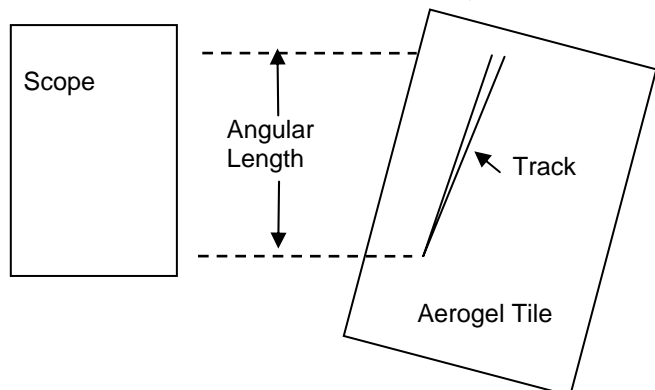
Level 3 Photo Documentation



In the image on the left above, an extracted aerogel tile is being documented from the side using backlighting, while on the right, the Level 3 fixture is rotated 90° clockwise such that the top of the tile is toward the microscope / camera imaging system for acquisition of the 7x & 20x top view mosaics images.

7x & 20x Mosaics – Top-view mosaics of each tile generated using the lowest magnification available from the PSS as well as a higher resolution mosaic taken at 20x. The 7x mosaic generally consist of six (6) individual image frames (3 columns by 2 rows) with each image consisting of 2088 x 1550 pixels. The 20x mosaics – on average – consisted of 8 columns by 5 rows, totaling 40 images per mosaic.

Feature Images – Images of individual features were acquired on all visible impact features when and where practical and possible. While mounted in the Level 3 fixture, each tile was scanned via the PSS from the side, in most cases with the Level 3 fixture rotate ~ 15° so that you were viewing the tile from below the exposed surface looking up or into the tile, as seen in the figure to the right. This configuration reduced the amount of aerogel that would be in the optical / image path a made recognition and imaging of the smaller impact features much easier. Lighting conditions for these images consisted of an ~ 1" diameter fiber optical light pipe mounted approximately two



inches above the aerogel tile and at an $\sim 30^\circ$ angle above the tile surface. It was found through numerous configurations that this particular arrangement was extremely efficient at illuminating the impact features and terminal particles or particles.

